

Docket/App No.: 2825.1023-001

Title: Novel Small Nuclear RNA Vectors ...

Inventors: David de Graaf and Eric S. Lander

10 20 30 40 50  
GACGGATCGGGAGATCTCCCCGATCCCCTATGGTCGACTCTCAGTACAATC

60 70 80 90 100  
TGCTCTGATGCCGCATAGTTAAGCCAGTATCTGCTCCCTGCTTGTGTGTT

110 120 130 140 150  
GGAGGTCGCTGAGTAGTGCGCGAGCAAAATTTAAGCTACAACAAGGCAAG

160 170 180 190 200  
GCTTGACCGACAATTGAGCTCGGTACCCGGGGAGATCCGGTAAGGACCAG

210 220 230 240 250  
CTTCTTTGGGAGAGAACAGACGCGAGGGGCGGGAGGGAAAAAGGGAGAGGC

260 270 280 290 300  
AGACGTCACCTCCCCCTTGCCGGCTCTGGCAGCAGATTGGTCGGTTGAGTG

310 320 330 340 350  
GCAGAAAGGCAGACGGGGACTGGGCAAGGCACCTGTCGGTGACATCACGGA

360 370 380 390 400  
CAGGGCGACTTCTATGTAGATGAGGCAGCGCAGAGGCTGCTGCTTCGCCA

410 420 430 440 450  
CTTGCTGCTTCACCACGAAGGAGTTCCCGTGCCCTGGGAGCGGGTTTCAGG

460 470 480 490 500  
ACCGCTGATCGGAAGTGAGAATCCCAGCTGTGTGTCAGGGCTGGAAAGGG

510 520 530 540 550  
CTCGGGAGTGCGCGGGGCAAGTGACCGTGTGTGTAAGAGTGAGGCGTAT

560 570 580 590 600  
GAGGCTGTGTGGGGGAGAGGCCCAAGATCTCAAGGCCCCATAACATGTG

610 620 630 640 650  
TACCATCGATTGCAGGGGAGATACCATGATCACGAAGGTGGTTTTCCCAG

660 670 680 690 700  
GGCGAGGCTTATCCATTGCACCTCCGGATGTGCTGACCCCTGCGATTTC

710 720 730 740 750  
CAAAGCTTGGAAACTCGACTGCATAATTTGTGGTAGTGGGGGACTGCGTT

760 770 780 790 800  
CGCGCTTTCCCTGACTTTCTGGAGTTTCAAAAGTAGACTGTACGCTAAC

810 820 830 840 850  
CGGATCCTCTAGAGTCGACCTGCAGGCATGCAGAAGACAATTAGCAGGCA

860 870 880 890 900  
TGCTGGGGATGCGGTGGGCTCTATGGCTTCTGAGGCGGAAAGAACCCAGCT

910 920 930 940 950  
GGGGCTCTAGGGGGTATCCCCACGCGCCCTGTAGCGGCGCATTAAGCGCG

Fig. 1A

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960 970 980 990 1000  
GCGGGTGTGGTGGTTACGCGCAGCGTGACCGCTACACTTGCCAGCGCCCT

1010 1020 1030 1040 1050  
AGCGCCCGCTCCTTTTCGCTTCTCTCCCTTCCTTTCTCGCCACGTTTCGCGG

1060 1070 1080 1090 1100  
GCTTTCCCCGTCAAGCTCTAAATCGGGGCATCCCTTTAGGGTTCCGATTT

1110 1120 1130 1140 1150  
AGTGCTTTACGGCACCTCGACCCCAAAAACCTGATTAGGGTGATGGTTC

1160 1170 1180 1190 1200  
ACGTAGTGGGCCATCGCCCTGATAGACGGTTTTTCGCCCTTTGACGTTGG

1210 1220 1230 1240 1250  
AGTCCACGTTCTTTAATAGTGGACTCTTGTTCCAAACTGGAACAACACTC

1260 1270 1280 1290 1300  
AACCCTATCTCGGTCTATTCTTTTGATTTATAAGGGATTTTGGGGATTTTC

1310 1320 1330 1340 1350  
GGCCTATTGGTTAAAAAATGAGCTGATTTAACAAAAATTTAACGCGAATT

1360 1370 1380 1390 1400  
AATTCTGTGGAATGTGTGTCAGTTAGGGTGTGGAAAGTCCCCAGGCTCCC

1410 1420 1430 1440 1450  
CAGGCAGGCAGAAGTATGCAAAGCATGCATCTCAATTAGTCAGCAACCAG

1460 1470 1480 1490 1500  
GTGTGGAAGTCCCCAGGCTCCCCAGCAGGCAGAAGTATGCAAAGCATGC

1510 1520 1530 1540 1550  
ATCTCAATTAGTCAGCAACCATAGTCCCGCCCCCTAACTCCGCCCATCCCG

1560 1570 1580 1590 1600  
CCCCTAATCCGCCCAGTTCCGCCCATTTCTCCGCCCATGGCTGACTAAT

1610 1620 1630 1640 1650  
TTTTTTTATTTATGCAGAGGCCGAGGCCGCTCTGCCTCTGAGCTATTCC

1660 1670 1680 1690 1700  
AGAAGTAGTGAGGAGGCTTTTTTGGAGGCCTAGGCTTTTGCAAAAAGCTC

1710 1720 1730 1740 1750  
CCGGGAGCTTGTATATCCATTTTCGGATCTGATCAGCACGTGTTGACAAAT

1760 1770 1780 1790 1800  
TAATCATCGGCATAGTATATCGGCATAGTATAATRCGACAAAGGTGAGGAA

1810 1820 1830 1840 1850  
CTAAACCATGGCCAAGTTGACCAGTGCCGTTCCGGTGCTCACCGCGCGCG

1860 1870 1880 1890 1900  
ACGTCGCCGAGCGGTGAGTTCTGGACCGACCGGCTCGGGTTCTCCCGG

Fig. 1B

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1910 1920 1930 1940 1950  
GACTTCGTGGAGGACGACTTCGCCGGTGTGGTCCGGGACGACGTGACCCT

1960 1970 1980 1990 2000  
GTTTCATCAGCGCGGTCCAGGACCAGGTGGTGC CGGACAACACCCTGGCCT

2010 2020 2030 2040 2050  
GGGTGTGGGTGC CGCGCTGGACGAGCTGTACGCCGAGTGGTCCGAGGTC

2060 2070 2080 2090 2100  
GTGTCCACGAACCTCCCGGACGCCTCCGGGCCGGCATGACCGAGATCGG

2110 2120 2130 2140 2150  
CGAGCAGCCGTGGGGCGGGAGTTCGCCCTGCGCGACCCGGCCGGCAACT

2160 2170 2180 2190 2200  
GCGTGCACTTCGTGGCCGAGGAGCAGGACTGACACGTGCTACGAGATTTTC

2210 2220 2230 2240 2250  
GATTCCACCGCCGCCCTTCTATGAAAGGTTGGGCTTCGGAATCGTTTCCG

2260 2270 2280 2290 2300  
GGACGCCGGCTGGATGATCCTCCAGCGCGGGGATCTCATGCTGGAGTTCT

2310 2320 2330 2340 2350  
TCGCCCACCCCAACTTGTATTGTCAGCTTATAATGGTTACAAATAAAGC

2360 2370 2380 2390 2400  
AATAGCATCACAAATTTACAAATAAAGCATTTTTTTCACTGCATTCTAG

2410 2420 2430 2440 2450  
TTGTGGTTTTGTCCAAACTCATCAATGTATCTTATCATGTCTGTATACCGT

2460 2470 2480 2490 2500  
CGACCTCTAGCTAGAGCTTGGCGTAATCATGGTCATAGCTGTTTCCTGTG

2510 2520 2530 2540 2550  
TGAAATTGTTATCCGCTCACAATTCCACACACATACGAGCCGGAAGCAT

2560 2570 2580 2590 2600  
AAAGTGTAAGCCCTGGGGTGCCTAATGAGTGAGCTAACTCACATTAAATG

2610 2620 2630 2640 2650  
CGTTGCGCTCACTGCCCGCTTTCCAGTCGGGAAACCTGTCGTGCCAGCTG

2660 2670 2680 2690 2700  
CATTAATGAATCGGCCAACGCCGGGGAGAGGCGGTTTGCGTATTGGGCG

2710 2720 2730 2740 2750  
CTCTTCGCTTCCTCGCTCACTGACTCGCTGCGCTCGGTGCTTCGGCTGC

2760 2770 2780 2790 2800  
GGCGAGCGGTATCAGCTCACTCAAAGCGGTAAATACGGTTATCCACAGAA

2810 2820 2830 2840 2850  
TCAGGGGATAACGCAGGAAGAACAATGTGAGCAAAAGGCCAGCAAAAGGC

Fig. 1C

2860 2870 2880 2890 2900  
CAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCC

2910 2920 2930 2940 2950  
CCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAAC

2960 2970 2980 2990 3000  
CCGACAGGACTATAAAGATACCAGGCGTTTTCCCCCTGGAAGCTCCCTCGT

3010 3020 3030 3040 3050  
GCGCTCTCTGTTCGACCCCTGCCGCTTACCGGATACCTGTCCGCCTTTC

3060 3070 3080 3090 3100  
TCCCTTCGGGAAGCGTGGCGCTTTCTCAATGCTCACGCTGTAGGTATCTC

3110 3120 3130 3140 3150  
AGTTCGGTGTAGGTCTGCTCCAAGCTGGGCTGTGTGCACGAACCCCC

3160 3170 3180 3190 3200  
CGTTCAGCCCGACCGCTGCGCCTTATCCGGTAACATCGTCTTGAGTCCA

3210 3220 3230 3240 3250  
ACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGG

3260 3270 3280 3290 3300  
ATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTG

3310 3320 3330 3340 3350  
GCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGC

3360 3370 3380 3390 3400  
TGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAA

3410 3420 3430 3440 3450  
CAAACCAACCGCTGGTAGCGGTGGTTTTTTTGTGCAAGCAGCAGATTAC

3460 3470 3480 3490 3500  
GCGCAGAAAAAAGGATCTCAAGAAGATCCTTTTGATCTTTTCTACGGGGT

3510 3520 3530 3540 3550  
CTGACGCTCAGTGGAACGAAAACTCACGTTAAGGGATTTTGGTCATGAGA

3560 3570 3580 3590 3600  
TTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAAAAATGAAGTTT

3610 3620 3630 3640 3650  
TAAATCAATCTAAAGTATATATGAGTAAACTTGGTCTGACAGTTACCAAT

3660 3670 3680 3690 3700  
GCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCC

3710 3720 3730 3740 3750  
ATAGTTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTT

3760 3770 3780 3790 3800  
ACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACCGG

Fig. 1D

3810 3820 3830 3840 3850  
CTCCAGATTTATCAGCAATAAACCCAGCCAGCCGGAAGGGCCGAGCGCAGA

3860 3870 3880 3890 3900  
AGTGGTCCCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCG

3910 3920 3930 3940 3950  
GGAAGCTAGAGTAAGTAGTTCCGCCAGTTAATAGTTTGCGCAACGTTGTTG

3960 3970 3980 3990 4000  
CCATTGCTACAGGCATCGTGGTGTACAGCTCGTCGTTTGGTATGGCTTCA

4010 4020 4030 4040 4050  
TTCAGCTCCGGTTCCCAACGATCAAGCCGAGTTACATGATCCCCCATGTT

4060 4070 4080 4090 4100  
GTGCAAAAAGCGGTTAGCTCCTTCGGTCCCTCCGATCGTTGTGAGAAGTA

4110 4120 4130 4140 4150  
AGTTGGCCCGCAGTGTATCACTCATGGTTATGGCAGCACTGCATAATTCT

4160 4170 4180 4190 4200  
CTTACTGTTCATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGAGTACTC

4210 4220 4230 4240 4250  
AACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTGCTCTTGCC

4260 4270 4280 4290 4300  
CGGCGTCAATACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTG

4310 4320 4330 4340 4350  
CTCATCATTGGAAAACGTTCTTCGGGGCGAAAACCTCTCAAGGATCTTACC

4360 4370 4380 4390 4400  
GCTGTTGAGATCCAGTTCGATGTAAACCCACTCGTGCACCCAACTGATCTT

4410 4420 4430 4440 4450  
CAGCATCTTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGG

4460 4470 4480 4490 4500  
CAAAATGCCGCAAAAAGGGAATAAGGGCGACACGGAATGTTGAATACT

4510 4520 4530 4540 4550  
CATACTCTTCTTTTCAATATTATTGAAGCATTTATCAGGGTTATTGTC

4560 4570 4580 4590 4600  
TCATGAGCGGATACATATTGAAATGATTTAGAAAAATAACAAATAGGG

4610 4620 4630  
GTTCCGCGCACATTTCCCGAAAAAGTGCCACCTGACGTC

Fig. 1E

u1baelZeo

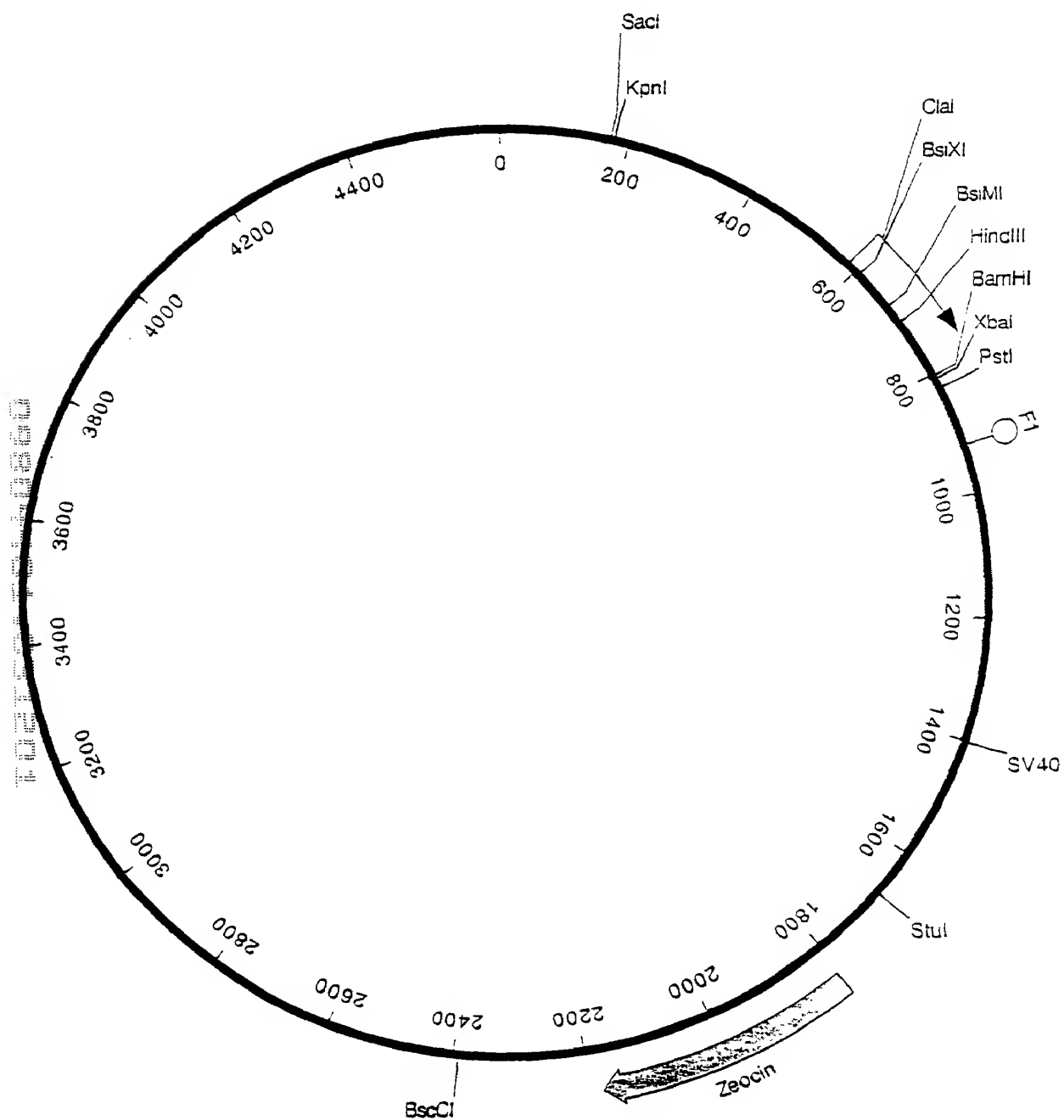


Fig. 2

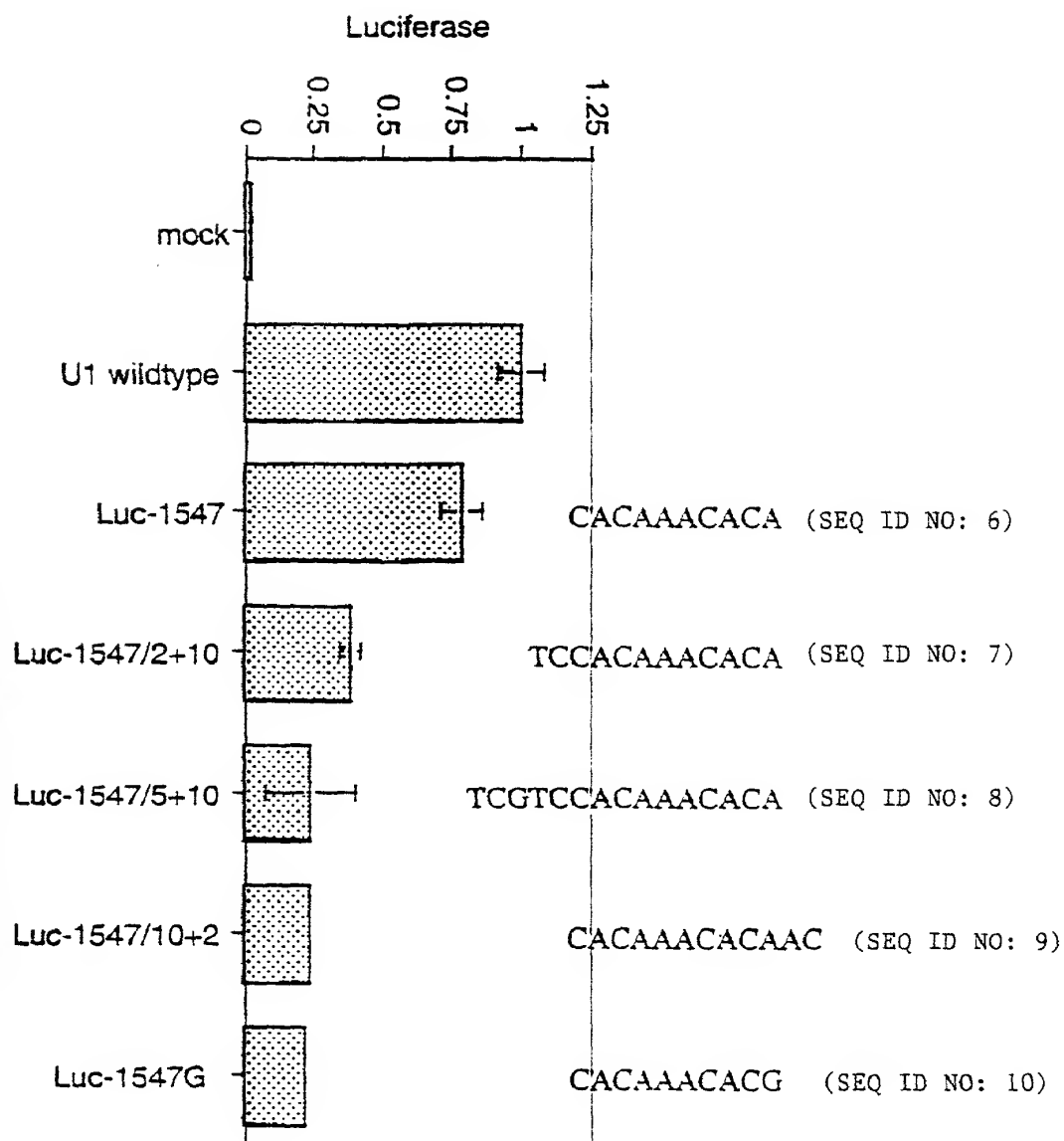


Fig. 3

### Bae1/U1 construct

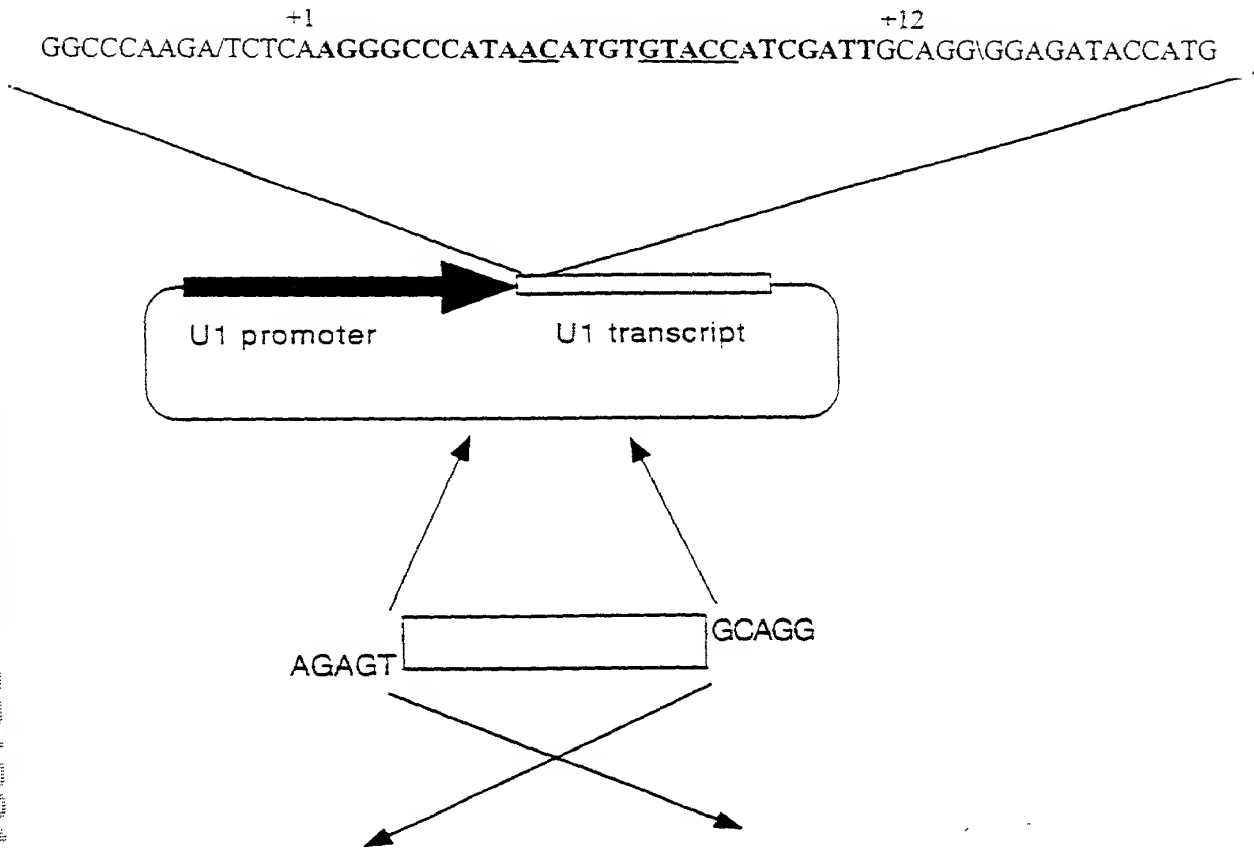


Fig. 4